

Appl. No. 10/632,788
Response Dated December 8, 2004
Reply to Office action dated October 6, 2004

REMARKS/ARGUMENTS

Applicants have received and carefully reviewed the Final Office Action of the Examiner mailed October 6, 2004. New claims 24-27 have been added. Support for the amendments and new claims is found in the specification, claims and drawings as originally filed at, for example, page 4, lines 6-8 and 20. Claims 1-27 remain pending. Reconsideration and reexamination are respectfully requested.

Rejection under 35 U.S.C. § 102(b)

Claims 1-3, 5-9, and 12-18 are rejected as being anticipated by Pittman (US 6,123,147). Applicants traverse the rejection. The method and system of Pittman involve using hot water from a hot water heater to heat air cooled by the refrigeration coil when the desired result is to reduce humidity without significantly affecting the ambient air temperature. Pittman specifically teaches "[t]he humidity control system uses hot water from the residential hot water heater to reheat air exiting from the refrigeration coils." See column 1, lines 42-44.

Applicants submit that Pittman does not teach many of the elements of the pending claims, and thus cannot anticipate the claims. Additionally, Pittman does not provide any motivation for altering his system to achieve the claimed invention. Pittman teaches operating a cooling system and hot water heater to achieve a desired level of humidity control. Pittman teaches his method and system as having an outlet temperature monitor 16 that measures the temperature of air exiting the system. See column 3, lines 32-34 and Figure 1. Pittman also teaches a modulating control valve 56 that provides a variable opening of the hot water pipe and is connected to control circuitry 50 that receives temperature signals from the inlet temperature monitor 14 and outlet temperature monitor 16. The control circuitry 50 also controls the compressor 24 of the air conditioning condenser unit 22 and the motor 13 associated with the blower 12. See column 4, lines 16-29 and Figure 1. Pittman teaches the circuitry controls the system:

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so as to return as much heat to the air in the plenum 10 as was removed by the refrigeration coils 20. Thus the ambient temperature is not appreciably affected, however dehumidification is obtained by the cooling of the air by refrigeration coils 20 (emphasis added).

(See, Pittman, column 6, lines 42-46). Thus, in the method and system of Pittman, the heating unit (i.e. water heater) is modulated to provide just enough heat to counteract the cooling of the cooling coils such that the ambient temperature produced thereby is not appreciably affected, as determined by the output temperature sensor. As can be seen, the method and system of Pittman provides a level of control over the thermal output of the hot water heater in order to maintain a relatively constant ambient output temperature.

In contrast to Pittman, independent claim 1, as amended, recites a method of controlling an HVAC system where each of the heating unit and the cooling unit provide a relatively constant thermal output in the "on" state. That is, the thermal output of the heating unit is not modulated, as suggested by Pittman. Independent claim 5, as amended, recites a method wherein the thermal output produced by the heating unit is not modulated to match the thermal output of the cooling unit when the heating unit and cooling unit are both in their "on" state. In claim 5, the ambient temperature would be appreciably affected, which is opposite to the teachings of Pittman. Independent claim 9, as amended, recites a method wherein, in a "drying" mode, the combined thermal output of the heating unit and the cooling unit is not zero or substantially zero. Thus, in claim 9, the ambient temperature would also be appreciably affected, which is opposite to the teachings of Pittman. Independent claim 12 recites an HVAC system in which a controller is adapted to operate both a heating unit and a cooling unit in un-modulated states that are not dependent on an output temperature of air provided by the HVAC system to the inside space. As noted above, Pittman teach to use a temperature sensor to modulate the heat provided by the water heater "so as to return as much heat to the air in the plenum 10 as was removed by the refrigeration coils 20". Independent claim 16, as amended, recites a method of updating an HVAC system in which the heating unit is a forced air furnace, and not a hot water heater as suggested by Pittman.

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As can be seen from the foregoing, the method and system of Pittman is quite different from that instantly claimed. For these and other reasons, reconsideration and withdrawal of the rejection are respectfully requested.

Rejection under 35 U.S.C. § 103

Claims 19 and 20 are rejected as being unpatentable over Pittman as applied to claim 1 and further in view of Official Notice that the use of computers to control HVAC systems was conventional at the time the invention was made. Applicants traverse the rejection.

As noted above, Pittman teaches operating a cooling system and a hot water heater to achieve a desired humidity control while not appreciably affecting the ambient temperature of the space. Pittman fails to teach methods or systems involving controlling both the heating and cooling units of an HVAC system, in which the heating unit is activated to provide an unmodulated heat output, as is recited in the instant claims. Thus, regardless of whether or not it was conventional at the time of the invention to use computers to control HVAC systems, the combination of Pittman and the Official Notice by the Examiner would result in the computer control of a cooling system and hot water heater such that the heat from the hot water heater is modulated so as to not appreciably affect the ambient temperature, not a computer-readable medium with a program for controlling both a heating unit and a cooling unit of an HVAC system in which the heating unit is activated to provide an unmodulated heat output. For these and other reasons, withdrawal of the rejection of claims 19 and 20 is respectfully requested.

Claims 4, 10, and 11 are rejected as being unpatentable over Pittman as applied to claim 1, and further in view of Alford. For the same reasons discussed above, as well as other reasons, dependent claims 4, 10 and 11 are also believed to be in condition for allowance.

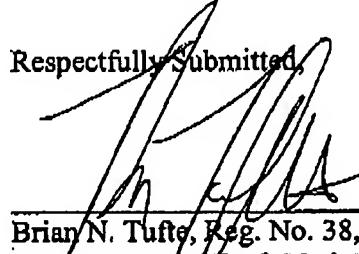
Claims 24-27 are newly presented. For the same reasons discussed above with respect to claim 1, as well as other reasons, new claims 24-27 are believed to be in condition for allowance.

Reconsideration and reexamination are respectfully requested. It is submitted that, in light of the above remarks, all pending claims 1-27 are now in condition for allowance. If a

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telephone interview would be of assistance, please contact the undersigned attorney at 612-677-9050.

Respectfully Submitted,



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